

MILLIMAN & ROBERTSON, INC.

Actuaries and Consultants

Three Corporate Place Bloomfield, Connecticut 06002 Telephone: 203/243-1138 Fax: 203/286-0564

January 13, 1992 .

Steven Weinberger Retirement Division Connecticut State Employees 55 Elm Street Hartford, CT 06106

Re: Revisions to the SERS June 30, 1991 Valuation Report

Dear Steve:

At your request, we have reviewed the recently negotiated agreement between the State and SEBAC as it relates to SERS. Several elements of the agreement have an impact on the State's fiscal year 1992-93 SERS contribution developed in our June 30, 1991 valuation. The negotiated agreement changes several elements of our calculations, which are summarized below:

. . . .

- starting with costs for the 1992-93 fiscal year, the unfunded liability will be amortized over 40 years; the contribution certified in our valuation report dated November 12, 1991 utilized a 30 year amortization.
- no contribution will be made towards the liability for Retirement Incentive Bonus programs until the 1994-95 fiscal year.
- the State's past service contribution for the 1991-92 fiscal year will be reduced by \$215 million.

A related issue is the wage increase assumed to be effective July 1, 1991, reflecting overall merit plus cost of living increases. You give us your best guess on the overall rate; our valuation report dated November 12, 1991 assumed 8% across the board increases. At your direction we have lowered this rate to 5%.

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January 13, 1992 Steven Weinberger Page 2

These changes reduce the required contribution for fiscal year 1992-93 from the \$444.2 million we certified in our report dated November 12, 1991 to \$426.3 million. The sources of the overall decrease of \$17.9 million are as follows:

June 30, 1991 valuation contribution projected to July 1, 1992	\$444.2 million
 decrease due to lower assumed salary increases for FY 91/92 (5% vs. 8%) 	(14.3)
 decrease due to change in amortization period (40 vs. 30 years) 	(11.8)
 increase due to \$215 million shortfall in State's contribution for FY 91/92 	20.1
 decrease due to postponement of funding the 1989 Retirement Incentive Bonus program until FY 94/95 	(11.9)
Contribution (reflecting negotiations) projected to July 1, 1992	\$426.3 million

We have taken several pages from our valuation report and added a column entitled "Addendum" which reflects these changes. Let us know if you think more supporting information is in order. We can also reissue the June 30, 1991 valuation report, if you desire.

Please call me if you have any questions.

Sincerely,

Althon A Cohwart

Althea A. Schwartz, F.S.A. Consulting Actuary

AAS/wif ltr01132.cse

cc: Gene Kalwarski

CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM PRINCIPAL RESULTS

ភ	- the Akhanii - AP		
·	Addendum	June 30, 1991 Valuation	% Chg
SYSTEM MEMBERSHIP			
 Active Membership Number of Participants Payroll Average Pay 	55,046 1,956,585,318 35,545	55,046 1,956,585,318 35,545	0.00 0.00 0.00
 Inactive Membership Number of Vested Deferred Members Number of Retired Members 	727 23,779	727 23,779	0.00 0.00
 Annual Retired Members Benefits 	262,970,516	262,970,516	0.00
- Average Annual Retired Member Benefit	11,059	11,059	0.00
ASSETS AND LIABILITIES			
 Assets Market Value Actuarial Value 	3,351,858,611° 3,208,135,557°	3,351,681,110 3,207,958,056	0.01 0.01
 2. Liabilities Retired and Deferred Vested Active Members Total Liability Unfunded Liability 	2,795,890,494 3,095,767,881 5,891,658,375 2,683,522,818	2,795,890,494 3,186,796,701 5,982,687,195 2,774,729,139	0.00 (2.86) (1.52) (3.29)
EMPLOYER CONTRIBUTIONS			
 Contributions as a Percent of Projected Payroll Normal Cost Unfunded Liability Total Contribution % 	8.85% 11.70% 20.55%	11.96%	
 2. Contribution Dollars Projected to the following FY - Normal Cost - Unfunded Liability - Total State Contribution 	183,658,575 242,680,053 426,338,628	189,127,218 255,116,161 444,243,379	(2.89) (4.87) (4.03)

^{*} Change in wage increase assumption affects assets allocated to Newington Children's Hostipal.

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^{**} Includes payment for Retirement Incentive Bonuses.

MILLIMAN & ROBERTSON, INC.

SYSTEM LIABILITIES

		ADDENDUM	JUNE 30, 1991 VALUATION
1.	Liability for Retired Members	\$2,780,344,628	\$2,780,344,628
2.	Liability for Deferred Vested Members	15,545,866	15,545,866
3.	Total Inactive Liability	\$2,795,890,494	\$2,795,890,494
4.	Active Members Actuarial Liability	3,095,767,881	3,186,796,701
5.	Total System Actuarial Liability	\$ <u>5,891,658,375</u>	\$ <u>5,982,687,195</u>
6.	Actuarial Value of Assets	3,208,135,557	3,207,958,056
7.	Total System Unfunded Actuarial Liability	\$ <u>2,683,522,818</u>	\$ <u>2,774,729,139</u> *

^{*} Does not reflect liability for the 1989 Retirement Incentive Bonuses.

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PROJECTED UNIT CREDIT UNFUNDED LIABILITY TO JULY 1, 1992

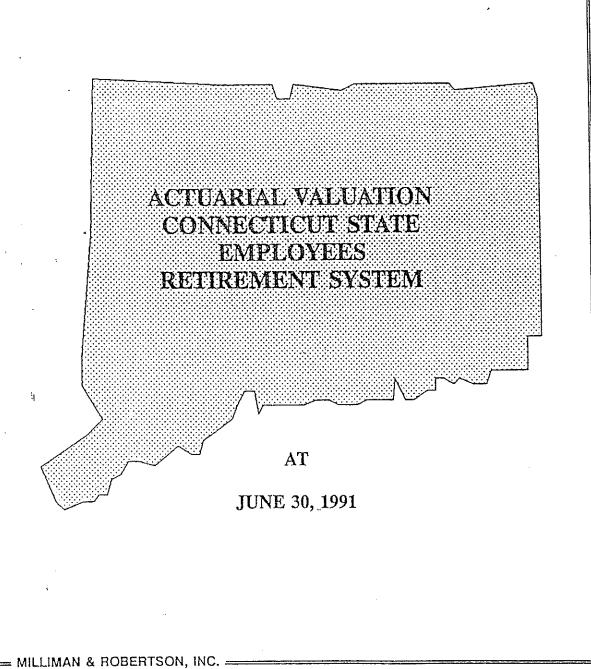
		ADDENDUM	JUNE 30, 1991 VALUATION
1.	Unfunded Actuarial Liability 7-1-91	\$2,683,522,818	\$2,774,729,139*
2.	One Year's Interest at 8½%	228,099,440	235,851,977
3.	Normal Cost (FY 1991-92)	180,005,022	180,005,022
4.	Interest on Normal Cost	6,909,493	6,909,493
5.	Less State Payments	(149,378,194)	(376,236,846)**
6.	Less Federal Payments (expected)	(55,000,000)	(55,000,000)
7.	Less Employee Contributions	(33,809,953)	(33,809,953)
8.	Less Interest on Contributions	(9,142,852)	(17,850,821)
9.	Unfunded Actuarial Liability 7-1-92	\$ <u>2,851,205,774</u>	\$2,714,598,011*

^{*} Does not reflect liability for the 1989 Retirement Incentive Bonuses. (These monthly payments of \$988,211 will be paid for a three year period with a total outlay of about \$35.6 million or \$11.9 million on an annual basis.)

^{**} Assumes the full FY 1991-92 contribution will be made.

PROJECTED UNIT CREDIT TOTAL COSTS TO JULY 1, 1992

		ADDENDUM	JUNE 30, 1991 VALUATION
1.	Unfunded Actuarial Liability 7-1-92	\$2,851,205,774	\$2,714,598,011
2.	Amortization Period	40 years	30 Years
3.	Amortization Payment	242,680,053	243,257,509
4.	Employer Normal Cost	183,658,575	189,127,218
5.	Adjustment for Retirement Incentive Bonu	s0	<u>11,858,852</u>
6.	Total Required Employer Contribution for Fiscal Year beginning 7-1-92	426,338,628	444,243,379
7.	Projected Payroll	\$2,074,383,636	\$2,133,651,858
8.	Total Employer Cost %	20.55%	20.82%



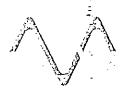
ACTUARIAL VALUATION OF THE CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM

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D	Actuarial Surplus Test
E	Entry Age Normal Valuation Results



MILLIMAN & ROBERTSON, INC.

Actuaries and Consultants

Three Corporate Place Bloomfield, Connecticut 06002 Telephone: 203/243-1138 Fax: 203/286-0564

November 12, 1991

State of Connecticut State Employees Retirement Commission 55 Elm Street Hartford, CT 06106

Re: Connecticut State Employees Retirement System

Members of the Commission:

At your request, we have made an actuarial valuation of the Connecticut State Employees Retirement System as of June 30, 1991. The results of the valuation are contained in the following report.

Section I contains an Executive Summary in which we present the principal results of this valuation. Details regarding System assets, liabilities, and costs are found in Sections II, III, and IV, respectively. Section V contains the disclosure information required by GASB #5. The Appendices contain information regarding System membership, an outline of the benefit provisions, a description of the actuarial methods and assumptions employed in this valuation, details on the Actuarial Surplus as of June 30, 1991, and Entry Age Normal Results.

As developed in Section IV, the recommended contribution for the fiscal year beginning July 1, 1992, including Federal reimbursements, is \$444,243,379.

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November 12, 1991
Re: Connecticut State Employees Retirement System
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In our opinion, this report fairly presents the financial and actuarial position of the Connecticut State Employees Retirement System at June 30, 1991. On the basis of the foregoing, we hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices set forth by the American Academy of Actuaries.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

Eugene M. Kalwarski, F.S.A. Consulting Actuary

Alther le Schwartz, F.S.A.

Consulting Actuary

SECTION 1 EXECUTIVE SUMMARY

SECTION I

EXECUTIVE SUMMARY

Purpose of Report

This report presents the results of the June 30, 1991 actuarial valuation of the Connecticut State Employees Retirement System (SERS). The primary purposes of performing the valuation are as follows:

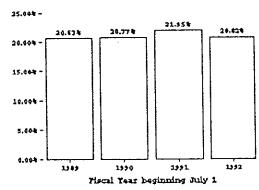
- to determine the contributions to be paid by the State for Fiscal Year beginning July 1, 1992
- to disclose asset and liability measures as of June 30, 1991, and
- to analyze and report on trends in System contributions, assets, and liabilities over the past several years.

Major Findings

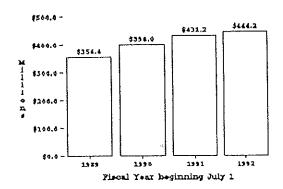
The major findings of the 1991 valuation are summarized and compared in the following charts:

SERS Contribution Rate

Over the past several years, the System contribution rate has increased slightly. (The 1991 contribution rate stands out due to several unusual-events discussed in the prior valuation report.)



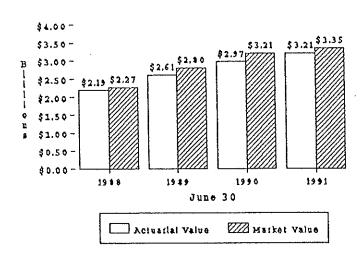
SERS Contribution Dollars



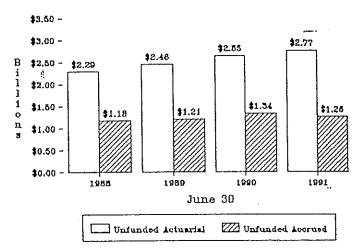
The dollar amount of the State's contribution equals the contribution rate shown above times the projected payroll. The dollar amount has grown over the last four years due primarily to growth in payroll.

System Assets

The System's assets have grown considerably in recent years due to investment performance and the contributions to the System.



Unfunded Liabilities



"actuarial" liabilities Unfunded ___ (projected) have generally increased each year for many reasons. Contributing factors include liability losses (arising from experience less favorable than expected), benefit early retirement improvements, incentives, and contribution shortfalls. Unfunded "accrued" liabilities (based on service and pay on June 30) have remained relatively stable during the period.

System Experience July 1, 1990 to June 30, 1991

There were several unusual circumstances which have been reflected in the development of costs and liabilities for the Fiscal Year beginning July 1, 1992. They are described below:

- The valuation process normally incorporates pay raises effective on the valuation date. Since salary negotiations between the collective bargaining units and the State are currently ongoing, we do not know the level of pay raises as of July 1, 1991. Our calculations assume all members receive an 8% salary increase (cost of living plus merit) effective July 1, 1991.
- The ongoing negotiations also involve the amount of the State's contribution for the 1991-92 fiscal year. Our calculations assume that the full \$431.2 million contribution will be made.
- The active employees of Newington Children's Hospital are no longer covered by SERS effective July 1, 1991. Former employees remain covered by SERS. System assets have been reduced to reflect transfer of funds to the new Newington pension plan. The transfer amount is the funded portion of the Newington Accumulated Benefit Obligation, where the funded percentage is that determined for the System as a whole.
- Issue #57 of the 1989 Arbitrator's Award requires a change in the Past Service amortization period to 30 years effective for the Fiscal Year beginning July 1, 1992. Under the prior schedule, the amortization period would have been 34 years.
- The Early Retirement Incentive Program continues to be funded at an annual rate of \$11.9 million, payable over three years. Fiscal Year beginning July 1, 1992 is the second year for which this program cost is recognized.

Each year, the primary factors which contribute to changes in the System's assets, unfunded liabilities, and contributions are: (1) expected changes due to the passage of time (eg. new employees) and (2) unexpected changes due to experience gains and losses. In the absence of performing a formal experience review of the System we estimate the source of changes as follows.

Assets

Between June 30, 1990 and June 30, 1991, the actuarial value of assets (measured on a five year smoothing basis) increased by \$235 million. This change was attributable to the following:

		(\$million)
June 30, 1990 actuarial value of assets		\$2,973
Change in Assets • Employer and Member Contribution • Benefits and Expenses • Expected Investment Earnings • Investment Gain/(Loss) • Assets allocated to Newington Children's Hospital Total Changes	298 (274) 253 (32) (10) 235	
June 30, 1991 actuarial value of assets	•	\$3,208

The expected investment earnings shown above are based on an assumed rate of return of 8.5%. However, the effective investment return on the actuarial value of assets was 7.43%, resulting in an actuarial loss of \$32 million. More details on the System assets are presented in Section II of this report.

Unfunded Liabilities

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Two different measurements of unfunded liabilities are shown in the following chart.

- <u>Actuarial Liability</u> is used for determining contribution levels. It is based on future payroll projections with service credits as of June 30, 1991.
- <u>Liability for Accrued Benefits</u> is used for informational purposes and is based on service and payroll as of June 30, 1991. The liability for accrued benefits can be used as a measure of the funded status of the System, since it represents the asset requirements on a shutdown basis.

The unfunded portion of the two liability measures is determined by subtracting the actuarial value of assets from the appropriate liability. The net changes in System unfunded liabilities between June 30, 1990 and June 30, 1991 are summarized below:

	June 30 (\$ million)	
	1991	1990	Change
Unfunded Actuarial Liability Unfunded Liability for	2,775	2,652	123
Accrued Benefits	1,258	1,341	(83)

The unfunded actuarial liability of the System increased during the past year. Assuming future experience is exactly as assumed and the State makes the required contribution, the unfunded actuarial liability is expected to decrease each year. This is because the unfunded actuarial liability is being amortized on a level dollar basis over a decreasing number of years. Effective for the Fiscal Year beginning July 1, 1992, the amortization period is 30 years.

Because of the shortfall in the State's contribution, for Fiscal Year 1990-91, the unfunded actuarial liability was expected to increase by \$104 million to a level of \$2,756 million as of June 30, 1991. On that date, the actual unfunded actuarial liability was \$2,775 million, or \$19 million higher than expected (\$2,775 minus \$2,756). The components of this \$19 million net actuarial loss are summarized as follows:

•	increase due to asset losses	\$ 32 million
•	decrease due to the removal of Newington Children's Hospital	(17) million
•	increase due to liability losses	<u>4 million</u>
	Net Actuarial Loss	\$19 million

System Contributions

System contributions projected to the Fiscal Year beginning July 1, 1992 are \$444.2 million. This exceeds the prior year's projection of \$431.2 million by \$13.0 million.

The sources of this increase are as follows:

Prior	year's contribution (projected to 1991)	\$431.2 million
•	increase due to expected payroll growth and	•
	changes in membership profile	6.9
•	increase due to asset losses	3.0
•	increase due to liability losses	0.4
- •	decrease due to removal of Newington	
	Children's Hospital	(3.5)
•	increase due to change in amortization period	6.2
Cont	ribution projected to July 1, 1992	\$444.2 million

Actuarial Surplus

There is no actuarial surplus as defined in Section 5-162h(b) of the Statute.

SUMMARY

During the past year, the System experienced various events which resulted in both decreases and increases in System costs. This is to be expected in future years as well since the anticipated accuracy of the actuarial assumptions are over the long term and not from year to year. Furthermore, the Projected Unit Credit actuarial funding method employed by the State tends to have some inherent instabilities and sensitivity to annual experience, given the two tier benefit levels of this System.

The overall System experience was mixed. On the one hand, the normal cost as a percent of pay decreased from 9.16% to 8.86%. This is the result of the change in the membership from the more costly Tier I to Tier II. This is the first year that the Tier II members outnumber the Tier I members.

On the other hand, the unfunded actuarial liability, and therefore the amortization payment, increased again this year. The increase was due primarily to unfavorable investment experience.

In concluding this executive summary, we present on the following page comparative statistics and actuarial information on both the June 30, 1991 and June 30, 1990 valuations.

CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM PRINCIPAL RESULTS

	June 30, 1991	June 30, 1990	% Chg
SYSTEM MEMBERSHIP			
 Active Membership Number of Participants Payroll Average Pay 	55,046 1,956,585,318 35,545	54,926 1,802,808,993 32,823	0.22 8.53 8.29
 Inactive Membership Number of Vested Deferred Members Number of Retired Members Annual Retired Members 	727 23,779 262,970,516	658 23,718 249,834,621	10.49 .26
Benefits - Average Annual Retired Member Benefit	11,059	10,534	4.98
ASSETS AND LIABILITIES			
Assets Market Value Actuarial Value	3,351,681,110 3,207,958,056		4.32 7.91
2. Liabilities - Retired and Deferred Vested - Active Members - Total Liability - Unfunded Liability	2,795,890,494 3,186,796,701 5,982,687,195 2,774,729,139	2,967,291,638 5,624,662,080	5.21 7.40 6.37 4.63
EMPLOYER CONTRIBUTIONS	-		
 Contributions as a Percent of Projected Payroll Normal Cost Unfunded Liability Total Contribution % 	8.86% 11.96% 20.82%	6 12.78%	
 2. Contribution Dollars Projected to the following FY - Normal Cost - Unfunded Liability** - Total State Contribution 	189,127,21 255,116,16 444,243,37	1 251,231,824	1.55

Does not include Liability for Retirement Incentive Bonuses.

Includes payment for Retirement Incentive Bonuses. MILLIMAN & ROBERTSON, INC.

SECTION II SYSTEM ASSETS

SECTION II

SYSTEM ASSETS

In this section we present the values assigned to the assets held by the System. These assets are valued on two different bases: the actuarial value and the market value.

Actuarial Value of Assets

For purposes of determining ongoing costs, the recognition of gains and losses are spread over five years. The resulting value is called the actuarial value of assets and is further adjusted as necessary so that the final actuarial value is within 20% (plus or minus) of the market value of assets.

Market Value of Assets

For certain accounting statement purposes, System assets are valued at current market rates. These values represent the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a reference point to compare to current accrued liabilities.

The following tables present information regarding the actuarial and market values of System assets as of June 30, 1991.

Contents
Market Value - Summary of Fund Transactions Market Value - Breakdown on June 30, 1991
Actuarial Value of Assets
Historical Summary (Actuarial and Market)

Table II-1

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MARKET VALUE OF ASSETS SUMMARY OF FUND TRANSACTIONS

Market Value July 1, 1990

\$3,212,789,521

Contributions

 State
 \$208,816,908

 Federal
 55,001,699

 Employee
 33,809,952

\$297,628,559

, ,

Investment Income

Interest and Dividends \$154,910,390
Realized Gains 16,110,453
Change in Unrealized Gains (45,666,489)

\$125,354,354

Disbursements

 Benefit Payments
 \$271,032,268

 Employee Refunds
 2,948,175

 Expenses
 174,520

\$274,154,963

\$3,361,617,471

Market Value June 30, 1991

Assets Allocated to Newington Children's Hospital 9,936,361

Net Market Value June 30, 1991 3,351,681,110

Estimated Rate of Return as of June 30, 1991 3.89%

Rate of Return as of June 30, 1990

Change Down 6.40%

MARKET VALUE OF ASSETS BREAKDOWN ON JUNE 30, 1991

The following is the Market Value of the State Employees Retirement Fund assets as reported to us by the Retirement Division:

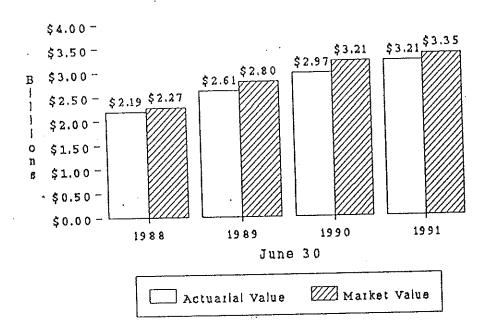
	Amount	% of Total
Cash	\$ 7,998,841	.24%
Accrued Interest	0	.00%
Investments		
 Cash Reserve Account Fixed Income Equity Contract Mortgage Real Estate International Funds Commercial Mortgage Fund Venture Capital Fund Connecticut Programs Fund 	\$ 139,500,260 791,819,465 1,241,864,643 0 12,366,110 479,418,938 548,641,547 102,365,694 31,458,688 6,183,285 \$3,353,618,630	4.15% 23.55% 36.94% .00% .37% 14.26% 16.32% 3.05% .94%
Total Market Value of Assets June 30, 1991	\$3,361,617,471	100.00%
Assets allocated to Newington Children's Hospital	9,936,361	
Net Total Value of Assets June 30, 1991	\$3,351,681,110	

ACTUARIAL VALUE OF ASSETS

Ending	Realized <u>Gains/Losses</u>	Change in Unrealized <u>Gains/Losses</u>	Total <u>Gains/Los</u>	sses
6-30-91 6-30-90 6-30-89 6-30-88 6-30-87	\$ 16,110,453 17,558,291 (38,287,173) 205,394,743 2,414,092	\$ (45,666,489) 145,435,286 240,205,288 (261,372,286) 52,019,533	\$ (29,556,0 162,993,5 201,918,1 (55,977,5 54,433,6	577 115 543)
Actuarial Value of A	Assets as of June 30, 199	91 is derived as follows:		
1. Market Value	e of Assets 6-30-91:		\$3,361,61	17,471
2. Five-Year Ga	nins and Losses Not Yes	t Recognized:		
60% o 40% o	f FY 91 of FY 90 of FY 89 of FY 88	(23,644,829) 97,796,146 80,767,246 (11,195,509)	143,7	23,054
3. 20% of (1)			672,3	23,494
4. Actuarial Va	lue of Assets 6-30-91 hin (1) +/- (3)		3,217,8	394,417
5. Assets Alloc	ated to Newington's Ch	ildren Hospital	9,9	936,361
	al Value of Assets 6-30-		3,207,9	958,056
Rate of Return on	Actuarial Value of Ass	sets as of June 30, 1991		7.43%
Rate of Return on	Actuarial Value of Ass	sets as of June 30, 1990		<u>9.04</u> %
Change			Down	1.61%

HISTORICAL SUMMARY OF SYSTEM ASSETS (dollars in billions)

System Assets



SECTION III SYSTEM LIABILITIES AND ACCOUNTING INFORMATION

SECTION III

SYSTEM LIABILITIES

In this section we present values assigned to the liabilities of the System and then compare these liabilities to System assets.

The actuarial funding method used to determine System costs is based on the Projected Unit Credit method. This method is also used to determine the Projected Benefit Obligation (PBO) required by the Government Accounting Standards (GASB). A more detailed description of this method can be found in Appendix C.

The tables in this section present System liabilities as follows:

<u>Table</u>	Contents
III-1	System Liabilities
III-2	Active Liabilities by Tier and Plan
III-3	Historical Summary of System Liabilities

SYSTEM LIABILITIES

		JUNE 30, 1991 %	JUNE 30, 1990
1.	Liability for Retired Members	\$2,780,344,628°	\$2,645,802,734*
2.	Liability for Deferred Vested Members	<u>15,545,866</u>	11,567,708
3.	Total Inactive Liability	\$2,795,890,494	\$2,657,370,442
4.	Active Members Actuarial Liability	3,186,796,701	<u>2,967,291,638</u>
5.	Total System Actuarial Liability	\$ <u>5.982,687,195</u> *	\$ <u>5,624,662,080</u> *
6.	Actuarial Value of Assets	3,207,958,056	2,972,748,082
7.	Total System Unfunded Actuarial Liability	\$ <u>2,774,729,139</u> *	\$ <u>2,651,913,998</u> *

Does not reflect liability for Retirement Incentive Bonuses. (These monthly payments of \$988,221 will be paid for a three year period with a total outlay of about \$35.6 million or \$11.9 million on an annual basis).

Table III-2

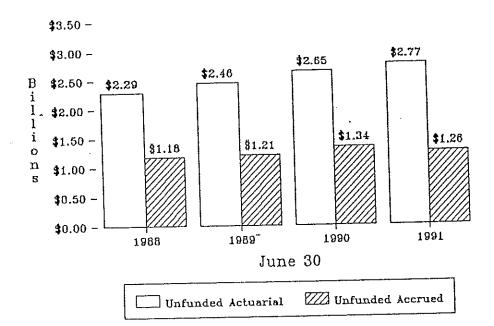
III 3

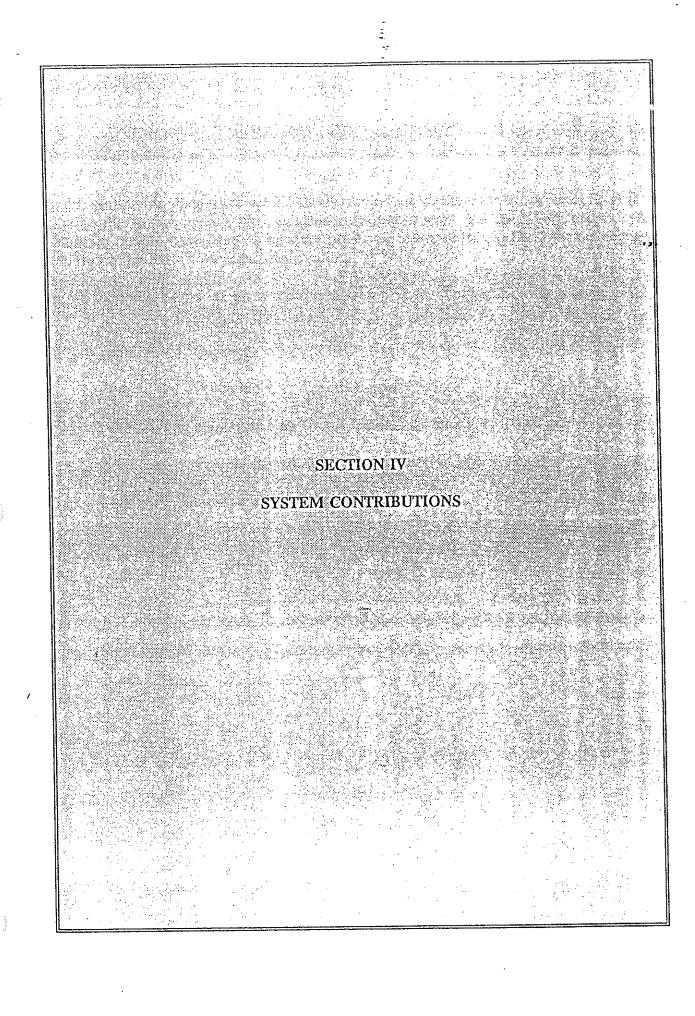
ACTIVE LIABILITIES BY TIER AND PLAN

.		
	ACTUARIAL	LIABILITY
	JUNE 30, 1991	JUNE 30, 1990
TIERI		
Hazardous Duty	426,005,739	354,300,569
Plan B	2,180,580,834	2,117,923,258
Plan C	213,843,371	215,632,864
Total	2,820,429,944	2,687,856,691
TIER II		
#		
Hazardous Duty	92,991,120	58,950,927
All Others	273,375,637	220,484,020
Tötal	366,366,757	279,434,947
GRAND TOTAL	2 106 706 701	2.057.207.523
GRAIND IUIAL	3,186,796,701	2,967,291,638

HISTORICAL SUMMARY OF UNFUNDED PAST SERVICE LIABILITIES (dollars in billions)

Unfunded Liabilities





SECTION IV

SYSTEM CONTRIBUTIONS

In this section we present the contributions required of the State in the upcoming fiscal year. Due to the timing of both the actuarial valuation process and the State's budget cycle, valuation results each June 30 must be projected to the following fiscal year in order to determine the State's required contribution.

In the following pages we present information on System contributions as follows:

<u>Table</u>	Contents
IV-1	Projected Unit Credit Normal Cost to 7-1-92
IV-2	Projected Unit Credit Unfunded Liability to 7-1-92
IV-3	Projected Unit Credit Total Costs to 7-1-92
IV-4	Comparison of Normal Cost Rates

IV - 2

Table IV-1

PROJECTED UNIT CREDIT NORMAL COST PROJECTIONS TO JULY 1, 1991

	7-1-91	7-1-91		7-1-92 PROJECTED EARNINGS	7-1-92 NORMAL COST
PLAN	NORMAL COST	EARNINGS	NORMAL COST %		
TIER I					
1. Hazardous Duty	\$21,412,836	\$119,359,821	17.9397%	\$123,418,055	\$ 22,140,872
2. Plan B	96,787,255	927,582,119	10.4344	959,119,911	8.228.016
3. Plan C	7,957,462	79,843,441	7.2001	201,000,00	5 (5)
Total	\$126,157,553	\$1,126,787,381		\$1,165,098,152	\$130,446,910
TIER II	·				
1. Hazardous Duty	\$14,763,610	\$144,080,426	10.2468% 5.2023	\$164,396,780 804,156,926	\$16,845,383 41,834,925
2. All Others	55,575,555	<i>•</i>		\$968,553,706	\$58,680,308
TOTAL TOTAL	こうできない こうこう		Secretary and a second		
System Normal Cost Projected to 7/1,	ected to 7/1/92: \$1	/92: \$189,127,218			
System Projected Earnings 7/1/92: \$2,133,651,858	s 7/1/92: \$2,133,65	51,858			
System Projected Normal Cost % at 7	Cost % at 7/1/92:	7/1/92: 8.8646%			

MILLIMAN & ROBERTSON, INC.

PROJECTED UNIT CREDIT UNFUNDED LIABILITY TO JULY 1, 1992

1.	Unfunded Actuarial Liability 7-1-91	\$2,774,729,139***
2.	One Year's Interest at 8½%	235,851,977
3.	Normal Cost (FY 1991-92)	180,005,022
4.	Interest on Normal Cost	6,909,493
5.	Less State Payments	(376,236,846)**
6.	Less Federal Payments (expected)	(55,000,000)
7.	Less Employee Contributions	(33,809,953)
8.	¿Less Interest on Contributions	(17,850,821)
9.	Unfunded Actuarial Liability 7-1-92	<u>\$2,714,598,011</u> *

- * Does not reflect liability for Retirement Incentive Bonuses. (These monthly payments of \$988,211 will be paid for a three year period with a total outlay of about \$35.6 million or \$11.9 million on an annual basis.)
- ** Assumes the full FY 1991-92 contribution will be made.

Table IV-3

IV - 4

PROJECTED UNIT CREDIT TOTAL COSTS TO JULY 1, 1992

1.	Unfunded Actuarial Liability 7-1-92	\$2,714,598,011
2.	Amortization Period	30 Years
3.	Amortization Payment	243,257,509
4.	Employer Normal Cost	189,127,218
5.	Adjustment for Retirement Incentive Bonus	11.858.852
6.	Total Required Employer Contribution for Fiscal Year beginning 7-1-92	444,243,379
7.	Projected Payroll	\$2,133,651,858
8.	Total Employer Cost %	20.82%

COMPARISON OF NORMAL COST RATES

	VALUATI	ON DATE
	JULY 1, 1991	JULY 1, 1990
TIER I		
Hazardous Duty	17.94%	18.87%
Plan B	10.43	10.63
Plan C	9.97	7.64
Total	11.20%	11,15%
	•	
TIER II		
Hazardous Duty	10.25%	12.23%
All Others	5.20	5.12
Total	6.06%	6.10%
		<u></u>
GRAND TOTAL	9.03%	9.16%
NOTE: The aggregate normal cost is less than the July 1, 199 of members out of Tier I	1 rate of 9.03% due to t	he assumed movement

SECTION V GASB #5 INFORMATION

SECTION V

GASB #5 INFORMATION

Government Accounting Standards Board Statement No. 5, "Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Government, Employers", requires that SERS disclosure certain information on an annual basis regarding the funding of the System. In this section we present this information. Additional information regarding System Assets, a Summary of Plan Provisions and the Actuarial Method and Assumptions can be found in Section II and Appendices B and C, respectively.

The following tables present the information required for compliance with GASB #5:

<u>Table</u>	Contents
V-1	Summary of Membership
V-2	Standardized Measures
V-3	Historical Contribution Information
V-4	Historical Analysis of Funding Progress

Background Information

The Connecticut State Employee Retirement System was created by the State of Connecticut to provide defined benefit pensions to its employees. The System is described in Chapter 66, State Employees Retirement Act, in Sections 5-152 to 5-192 to Title 5 of the General Statutes of Connecticut.

The State's funding policy has been to contribute each year an amount equal to the normal cost plus an amount representing amortization of the unfunded actuarial accrued liability over thirty years (ending June 30, 2022), less amounts reimbursed by the Federal Government. The actuarial assumptions used to calculate the figures reported herein are the same as those used to calculate the contribution level.

Table V-1

V - 2

SUMMARY OF MEMBERSHIP

	JUNE 30,1991	JUNE 30, 1990
Current employees:		
Vested: Hazardous Duty Plan B Plan C Tier II	1,883 18,140 1,864 615	1,544 17,937 1,923 518
Not yet vested: Hazardous Duty Plan B Plan C Tier II Total current employees	4,627 3,642 289 23,986 55,046	3,744 5,085 425 <u>23,750</u> 54,926
Retirees and beneficiaries currently receiving benefits:	23,779	23,718
Terminated employees entitled to benefits but not yet receiving them:	727	658
Total Members	<u>79,552</u>	<u>79,302</u>

STANDARDIZED MEASURES

	JUNE 30,1991	JUNE 30, 1990
Pension Benefit Obligation '		
Retired Members	\$2,780,344,628	\$2,645,802,734*
Terminated Vested Members	15,545,866	11,567,708
Active Members		
- Accumulated employee contributions with interest	285,117,598	256,785,734
- Employer-financed vested portion	2,409,260,456	2,286,724,127
- Employer-financed non-vested portion	492,418,647	423,781,777
- Total	3,186,796,701	2,967,291,638
Total System Obligation	<u>5,982,687,195</u> °	5,624,662,080°
Market Value of Assets	3,351,681,110	3,212,789,521
Unfunded Pension Benefit Obligation	2,631,006,085	2,411,872,559

Does not reflect liability for Retirement Incentive Bonuses. (These monthly payments of \$988,221 will be paid for a three year period with a total outlay of about \$35.6 million or \$11.9 million on an annual basis.)

Table V-3

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HISTORICAL CONTRIBUTION INFORMATION

				Control of the contro	Company of the state of the sta	一 一 日本 日本 日間子は	
	FISCAL YEAR	FISCAL YEAR	FISCAL YEAR 1989-1990	FISCAL YEAR 1990-1991	FISCAL YEAR 1991-1992	FISCAL YEAR 1992-1993	
	196/-1900						
	8120 804 028	\$175 118 568	\$137,531,541	\$179,549,626	\$180,005,022	\$189,127,218	
Employer Normal Cost	\$120,00 1 ,020	4140,110,000					
, , , , , , , , , , , , , , , , , , ,	793 67 006	249.196.138	258,836,930	218,467,282	251,231,824***	255,116,161	
Fast Service Cust	200,170,101						
Total Employer Cost	\$321,597,993	\$374,314,706	\$396,368,471	\$398,016,908**	\$431,236,846	\$444,243,379	
Total Title	v						
Total Employer Cost as	22 150%	24 16%	23.07%	20.77%	21.95%	20.82%	
a percent of payroll	07.64.67	0/04:14					
To the state of th	\$ 28 125 125	\$ 28.710.609	\$ 29,198,019	\$ 33,809,953	N/A	N/A	=
Employee Continuations	200000000000000000000000000000000000000						
	321 550 108	324.314.706	288,368,471	263,818,607	N/A	N/A	
Employer Contributions	001,000,120						
	¢340 575 133	. \$353.025.315	\$317,566,490	\$297,628,560	N/A	N/A	
I ofal Contributions	シャン・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・						

The changes in assumptions made effective July 1, 1987 increased the cost for Fiscal Year 1988-1989 by approximately \$5 million.

Includes an additional contribution of \$10,241,000 (\$3,381,000 Normal Cost + \$6,860,000 Past Service Cost) needed to fund benefit improvements resulting from negotiations with the State Employees Bargaining Agent Coalition. *

*** Includes \$11,858,652 payment of Retirement Incentive Bonus.

HISTORICAL ANALYSIS OF FUNDING PROGRESS (millions)

AS A % OF PAY 133.8% 134.5% OBLIGATION UNFUNDED 143.9% 129.2% 145.7% (4)/(5) 1,956.6 1,802.8 1,759.5 1,583.0 \$1,429.1 ANNUAL COVERED PAYROLL 9 UNFUNDED OBLIGATION 2,411.9 2,631.0 2,277.5 2,272.6 \$2,082.4 (1) - (2) 3 PERCENTAGE FUNDED 56.0% 57.1% 55.2% 50.0% 49.1% (1)/(2)9 5,982.7 5,071.5 5,624.7 \$4,089.3 OBLIGATION 4,550.7 BENEFIT PENSION છ FOR BENEFITS* 3,351.7 NET ASSETS 3,212.8 2,798.9 AVAILABLE \$2,006.9 2,273.2 Ξ 1987 - 1988** 1991 - 1992 1989 - 1990 1990 - 1991 1988 - 1989 FISCAL YEAR

Market Value First period for which pension benefit obligations have been calculated in accordance with GASB Statement No. 5.

APPENDIX A SUMMARY STATISTICS ON SYSTEM MEMBERSHIP

APPENDIX A

SUMMARY STATISTICS ON SYSTEM MEMBERSHIP

TABLE OF CONTENTS

		<u>Page</u>
A.	Summary of Active Membership Data	. A-1
В.	Summary of Retired Membership Data	A-3
C.	Analysis of Active Membership and Salary by Age and Service	A-4
D.	Analysis of Retired Membership and Benefits by Age and Year of Retirement	· A -9

Appendix A

SUMMARY OF ACTIVE MEMBERSHIP DATA

We received data on a total of 56,002 members, including employees of State Aided Institutions. Of the active records submitted to us, 188 (.3%) were rejected due to missing or invalid dates of birth and/or hire. Cost calculations were not revised to reflect these records. We also removed 768 members who are no longer covered because they are part of Newington Children's Hospital. The following analysis compares this data with the July 1, 1990 data (see Exhibit A-4 for distribution by age and service).

	7/1/91	7/1/90	CHANGE	PERCENT CHANGE
Total Employees Total Earnings (millions) Average Earnings	55,046	54,926	+ 120	+.2%
	\$1,956.6	\$1,802.9	+ \$153.7	+8.5%
	\$32,545	\$32,823	+ \$2,722	+8.3%

Earnings figures as of July 1 are actual amounts paid during the previous July 1 to June 30 period, adjusted for negotiated increases and merit adjustments effective through and including July 1; new entrant earnings are annualized.

These figures are broken down by Plan in the following exhibit.

SUMMARY OF ACTIVE MEMBERSHIP DATA

	7/1/91	7/1/90	CHANGE	PERCENT CHANGE
Number of Members				
Tier I Hazardous Duty Tier I Plan B Tier I Plan C Tier II Hazardous Duty Tier II Others Total	2,503 21,782 2,153 4,007 24,601 55,046	2,211 23,022 2,348 3,077 24,268 54,926	+ 292 -1,240 -195 + 930 + 333 + 120	+13.2% -5.4% -8.3% +30.2% +1.4% +0.2%
Total Annual Compensation (millions)				
Tier I Hazardous Duty Tier I Plan B Tier I Plan C Tier II Hazardous Duty Tier II Others Total	119.4 927.6 79.8 144.1 685.7 1,956.6	97.9 913.5 80.6 98.7 612.2 1,802.9	+14.1 -0.8 +45.4 +73.5	+1.5% -1.0% +46.0% +12.0%
Average Compensation			.0.61	5 +7.7%
Tier I Hazardous Duty Tier I Plan B Tier I Plan C Tier II Hazardous Duty Tier II Others Total	47,687 42,585 37,086 35,957 27,874 35,545	- 39,67 34,33 32,06 25,22	8 +2,90 0 +2,75 4 +3,89 6 +2,64	+7.3% +8.0% +12.1% +10.5%
Average Age				1 207
Tier I Hazardous Duty Tier I Plan B Tier I Plan C Tier II Hazardous Duty Tier II Others Total	42.: 45. 53. 32. 37. 41.	9 45 1 52 8 31 4 36	+ + + + + + + + + + + + + + + + + + +	.7 +1.7% .8 +1.8% .5 +1.0% .9 +2.8% .8 +2.2% .5 +1.2%
Average Service				.275
Tier I Hazardous Duty Tier I Plan B Tier I Plan C Tier II Hazardous Dut Tier II Others	y 3	1.1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4.9 5.2 2.8 3.4	+ .5

Appendix A Summary Statistics on System Membership

SUMMARY OF INACTIVE MEMBERSHIP DATA

	7/1/91	7/1/90	CHANGE	PERCENT CHANGE
Retirees				
Number Total Annual Benefit Average Annual Benefit	23,779 \$262,970,516 11,059	23,718 \$249,834,621 10,534	+61 +13,135,895 +525	+.3% +5.3% +5.0%
Terminated Vested				
Number	727	658	+69	+10.5%

Analysis by Age and Service - Tier I - Hazardous Duty

Appendix A

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ACTIVE MEMBERS YEARS OF SERVICE

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UNDER 5		32
AGE	Under 20 20 TO 24 25 TO 29 30 TO 34 35 TO 39 40 TO 44 45 TO 49 50 TO 54 55 TO 59 60 TO 64	TOTALS

AVERAGE SALARIES

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Analysis by Age and Service - Plan B

Appendix A

ACTIVE MEMBERS YEARS OF SERVICE

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AVERAGE SALARIES

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25 TO 29	20 152	28.347	28,439	0	0	0) 	-	- C	· c	0	33,673
20 TO 24	201,62	35,000	32,994	33,563	0	0	0	D) C	0 C	C	38,640
25 TO 30	0.000	37.414	38,856	39,626	38,761	0	O 1	0	- C		C	42,923
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			200 246	74 043	250 8P	51.273	53,225	55,307	57,207	76,794	0	42,585
TOTALS	33,622	30,194	04/00		200	200 00 00 00 00 00 00 00 00 00 00 00 00						
					MICCIMA	NEROBE	KIRON, INC	. 4				

Appendix A

Analysis by Age and Service - Plan C

T. Carrier of St.

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ACTIVE MEMBERS YEARS OF SERVICE

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ALL YEARS	0	0	10	78	175	223	249	321	427	448	222	2,153
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40.TO 45	0	0	0	0	0	0	0	0	Ħ	2	5	8
.35 TO 40	0	0	0	0	0	0	0	9	23	12	3	46
30 TO 35	0	0	0	0	0	0	-	13	19	S	4	42
25 TO 30	0	0	0	0	0	3	12	23	24	27	12	101
20 TO 25	0	0	0	0	4	43	09	58	72	100	45	382
15 TO 20	0	0	0	9	46	64	8	73	86	105	51	509
10 TO 15	0	0	2	49	89	75	78	104	141	151	71	760
5 TO 10	0	0	80	21	31	32	29	42	43	44	19	269
UNDER 5	0	0	0	2	3	9	ю	2	9	-		27
AGE	Under 20	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 & UP	TOTALS

AVERAGE SALARIES

AGE	UNDER 5	s ro 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
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25 TO 29	3 C	30.585	35.853	00	0 0	0	0	0	0	0	0	31,639
30 TO 34	70 734	31.878	34.961	29.697	0	0	0	0	0	0	0	33,592
35 TO 39	742,62	32,649	34.782	34 579	29.825	0	0	0	0	0	0	33,939
40 T 04	745,42	36.941	36.859	38.793	35.742	27.493	0	0	0.	0	0	36,775
45 TO 49	415,52	38.079	38.035	39,957	39,320	39,944	26,364	0	0	0	С	39,128
50 TO 54	24 574	29,350	33,310	39,118	40,795	42,850	43,373	37,341	0	0	С	36,639
55 TO 59	C90 CE	34,222	32,491	38,072	41.918	42,025	49,634	41,047	35,178	0	C	37,308
60 TO 64	20,702	31,713	33.975	37,052	42,108	43,516	46,952	52,636	39,960	46,118	C	37,553
65 & UP	54,324	30,091	35,634	38,286	38,929	48,146	36,403	51,624	47,801	\$6,501	49,470	38,334
TOTALS	33,635	33,026	34,628	37,954	40,215	42,660	45,563	44,736	44,263	46,453	. 49,470	37,086
1				***************************************	****	SAUVE OF	THE PARTY					the state of the s

ACTIVE MEMBERS YEARS OF SERVICE

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AGE	Under 20 20 TO 24 25 TO 29 30 TO 34 35 TO 39 40 TO 44 45 TO 49 50 TO 54 55 TO 59	65 & UP TOTALS

AVERAGE SALARIES

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AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20 20 TO 24 25 TO 29 30 TO 34 35 TO 39 46 TO 44 45 TO 49 50 TO 54 55 TO 59 60 TO 64	24,068 30,571 33,898 35,478 35,432 35,811 34,601 37,919 33,428	32,737 39,369 39,498 40,700 40,005 39,933 40,463 43,979 44,876 83,126	25,560 39,428 34,150 38,801 29,687 36,481 36,4400 0	0 0 0 41,859 40,212 40,494 25,965 0	0 0 0 0 46,317 55,131 0	0 0 0 0 0 45,970 0	000000000			0000000000	000000000	24,068 30,641 35,137 35,916 37,538 36,906 38,699 39,997 41,330 77,858
TOTALS	34 302	39 995	36,841	38,533	50,724	45,970	0	0	0 0	0	0	35,957
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Analysis by Age and Service - Tier II - All Others

Appendix A

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ACTIVE MEMBERS YEARS OF SERVICE

	<u> </u>	- - -
ALL YEARS	125 1,969 4,859 4,498 3,691 3,299 2,486 1,541 1,110 673 350	24,601
50 & UP	0000000000	0
45 TO 50	000000000	0
40 TO 45	0000000000	0
35 TO 40	00000000	2
30 TO 35	00000+0000	1
25 TO 30		
20 TO 25	0 0 0 0 2 2 17 17 15 6	901
15 TO 20	0 0 0 1 1 1 1 1 1 1 0 0 0 0 0 0 1 1 1 1	109
10 TO 15	0 0 26 53 53 32 26 19 26	303
5 TO 10	0 231 1,695 1,922 1,408 1,408 1,049 705 556 358	9,676
UNDER 5	125 1,738 3,160 2,549 2,067 1,743 1,337 772 502 502 285	14,397
AGE	Under 20 20 TO 24 25 TO 29 30 TO 34 40 TO 44 45 TO 49 50 TO 54 55 TO 59 60 TO 64	TOTALS

AVERAGE SALARIES

3,323 0 <th>A G.F.</th> <th>UNDER 5</th> <th>UNDER 5 S TO 10</th> <th>10 TO 15</th> <th>15 TO 20</th> <th>20 TO 25</th> <th>25 TO 30</th> <th>30 TO 35</th> <th>35 TO 40</th> <th>40 TO 45</th> <th>45 TO 50</th> <th>50 & UP</th> <th>ALL YEARS</th>	A G.F.	UNDER 5	UNDER 5 S TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
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25,804 28,962 25,317 0	20 TO 24	17.579	21,081	0	0	0	0	9	D	> (> 0		3/// 20
26,713 31,826 28,484 18,264 0	05 TO 20	55 SO	C90 8C	25317	C	0	0	0	0	0	<u> </u>	>	C05,02
26,713 31,826 28,484 18,204 18,204 18,204 18,204 18,204 18,204 18,204 0 <	77 07 77	£00,02	40,04	1,00	* > 0 0 7		c	<u> </u>	c	C	0	0	28,906
27,494 32,784 34,195 30,065 27,911 0 </td <td>30 TO 34</td> <td>26,713</td> <td>31,826</td> <td>78,484</td> <td>18,204</td> <td>></td> <td>י כ</td> <td>> <</td> <td>> <</td> <td>, (</td> <td>c</td> <td><u>_</u></td> <td>29 831</td>	30 TO 34	26,713	31,826	78,484	18,204	>	י כ	> <	> <	, (c	<u>_</u>	29 831
27,360 33,465 34,707 47,570 43,074 46,832 0 <t< td=""><td>35 TO 39</td><td>27.494</td><td>32,784</td><td>34,195</td><td>30,065</td><td>27,911</td><td>0</td><td>5</td><td>⊋</td><td>) (</td><td>> 0</td><td>0 0</td><td>30 501</td></t<>	35 TO 39	27.494	32,784	34,195	30,065	27,911	0	5	⊋) (> 0	0 0	30 501
27,325 31,379 42,957 43,970 41,939 51,361 23,054 0	40 TO 44	035.70	33,465	34.707	47,570	43,074	46,832	0	0	0	O '	> <	100,00
27,527 30,578 42,737 43,395 48,156 5,031 0 <th< td=""><td></td><td>50000</td><td>2000</td><td>72,057</td><td>72,070</td><td>41 030</td><td>51 261</td><td>23.054</td><td>0</td><td>0</td><td>0</td><td>=</td><td>100,02</td></th<>		50000	2000	72,057	72,070	41 030	51 261	23.054	0	0	0	=	100,02
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26,416 30,330 35,732 35,336 37,762 38,420 0 <t< td=""><td>50 TO 54</td><td>27,527</td><td>30,578</td><td>31,923</td><td>45,395</td><td>48,156</td><td>5,031</td><td>></td><td>ο ,</td><td>· c</td><td>÷ (</td><td></td><td>28 830</td></t<>	50 TO 54	27,527	30,578	31,923	45,395	48,156	5,031	>	ο ,	· c	÷ (28 830
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25,422 30,981 34,798 42,795 41,552 39,167 23,054 17,493 5 0 0	7.	# / · · · ·		-(1000.	40 05 000 0. July 20 80	2000000 x 2 2 2 2	19.45	\$200 miles	100		200 000
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		.c by Patirement Year	S. D. Arrange and A.	
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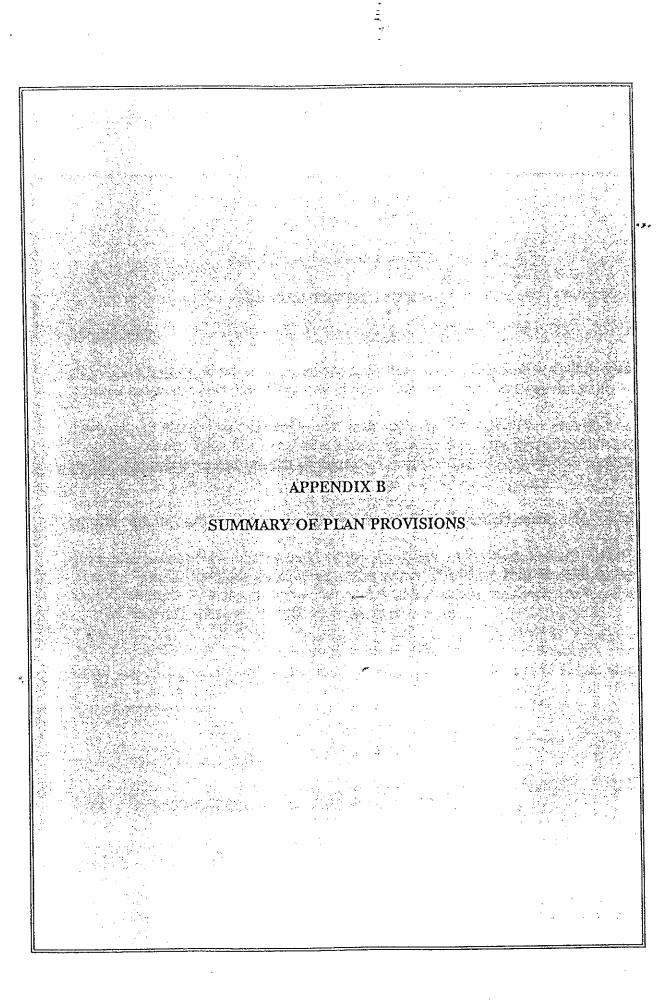
Appendix A

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		Other	Retirement	6,286	5,973	6,100	5,234	0,037 5,361	4,95	6,404	5,6	5,7,	7,335	7,034 8,443	8,704	6,317	7,3	7,7		5,968	6,051	77.		~~~										
		Hazardous Duty	Retirement	7,691	9,022	8,195	0	0 181	8,101	0,0	С	7,906	10,011	9,668	12,504	15,200	17,177	18,329	16,008	17,022	17,283	15,810	15,625	10,707	18,769	20,013	22,870	22,695	24,463	25,968	24,599	27,498		
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100	KAGE	Non-Service Connected	Disability						· ·	2 +	-1 F	- 10		5	 &	23	× ×			- 62	5 5 -	47	- 8	48	29	14	3 5	2, 5	<u> </u>	 	332	080		
	AV	Service	Disability	4 600	4,000	4,54	5,26	5,805	6,168	4,962	2,001	4,187	6,783	576,9	7,848	8,562	10,368	9,779	8,421	6,879	7,569	6,347	7,306	8,8	9,459	7,6	9,623	7,7	10,020	12,600	14.832	22,080		
			Service Retirement	1367	0,731	5,922	7,0,7	7,702	6,712	7,498	6,950	6,517	7.031	606	9,799	9,658	10,085	0,473	9,006	8,596	8,249	7770	8.595	8,910	10,333	10,741	11,560	13,048	13,893	14,662	14,434	16.805		TAY.
			: 35:35-3-35	ī	74	12	∞ <u>;</u>	22	19	23	17	27	27 %	== १ %	₹ Ş	14 H	57	45 E	5 t2	71	9	æ 6	\$ 5	#1 42	1 th	95	117	149	180	150	257	0.C1 F		
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4,	NUMBER OF RETIREES	Non-Service	Connected Disability		'n			,			-	, pará	***	(4	7	4, 4	, ~ .																	
	NUMBE	Service	Connected	Disability	14	<u> </u>	7 2	С	∞	<u>о</u> с	 	0 4	10	12	11	21,5	3 %	3 23	4	<u> </u>	17	11	18	21	16	য় গ		3 £	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	३ <i>६</i>	S &	ς ∞	_	
		5			<u> </u>					10.1			7 1-	- 40	. ,	7	m	2.5	15	27	<u>ຕ</u>	- 5	. 80	704	615	31	793	668	987	<u> </u>	2 5	25.5	203	
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	<u> </u>		Retirement	Year		Pre-1960	-	20	4 53		55	1966	67	1968	1903	1971	1972	1973	1974	9261	7761	1978	6/61	1980	1982	1983	1984	1985	1986	1987	1988	1989	1931	
			Rei			Pre	1988	1961	1963	1964	1965	61	1967	7 5	7 5	61	5	¥ ;	1 -	1 🖺	¥ì	<u> </u>		→ F	4 F		-	 -	_					_]

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Analysis of Retired Members by Current Age
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	Other Retirement	11,808	11,138	11,865 8,203	7,093 7,528	6,904	7,048	5,122	7,998
ZFIT	Hazardous Duty Refirement	. 0	23,110 26,136	24,653 22,464	20,258	15,847	12,518 10,870	6,184	21,309
AVERAGE BENEFIT	Non- Service Connected Disability	6,302	9,646	11,654	7,721	6,565	7,396	5,498	8,165
AVE	Service Connected Disability	12,028	11,302	12,665 9,044	8,079 6,488	6,837	8,610 6,253	7,337	9,413
	Service Retirement	9,902	16,550 13,231	27,576 16,920	14,146	10,166 8,965	8,819	6,562	11,022
	Other Retirement	47	57 95	. 105	417	310 221	163	38	2,342
TIREES	Hazardous Duty Reffrement	0	13	222	224	93	19	0	1,143
NUMBER OF RET	Non- Service Connected Disability	12	18	64	168	142	88	15	266
NUMB	Service Connected Disability	35	43	76	95	57 34	19	₩ ₩	615
	Service Retirement		7 7	3,018	2,943	4,211 3,059	1,799	288	18,687
The state of the s	Current Age	Less than 40	40 to 44 45 to 49	50 to 54 55 to 59	60 to 64 65 to 69	70 to 74 75 to 79	80 to 84 85 to 89	90 to 94 95 to 99	Final Totals



APPENDIX B

SUMMARY OF PLAN PROVISIONS

CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM

Established September 1, 1939

Reflects Arbitrator's Award

1. Membership

<u>Tier I [Sec. 5-160]:</u> Each state employee appointed to classified service shall become a member on the first day of the pay period following permanent appointment.

Each officer elected by the people and each appointee of such officer exempt from classified service may elect to become a member, effective on the first day of the pay period following receipt of such election.

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Each other state employee exempt from classified service shall become a member on the first day of the pay period following six months of employment.

Except as noted below employees hired prior to January 1, 1984 could elect (no later than January 2, 1984) to be covered under either Plan B or Plan C. Employees under contracts with Union Independent and CSEA unions hired prior to October 1, 1982 had until October 1, 1984 to make such election.

Tier II [Sec. 5-192e]: Tier II consists of employees first joining the retirement system on or after January 1, 1984 plus employees hired between July 1, 1982 and January 1, 1984 who elected Tier II. Each state employee becomes a member on the first day of employment.

2. Normal Retirement Eligibility

Tier I - Hazardous Duty [Sec. 5-173]: 20 years of service.

Tier I - Plans B and C [Sec. 5-162]: Age 55 and 25 years of service, age 60 and 10 years of service, or age 70.

<u>Tier II [Sec. 5-1921]:</u> Age 62 and 10 years of service (effective 7/1/92) or age 60 and 25 years of service or age 70 and 5 years of service, except hazardous duty members may retire after 20 years.

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3. Normal Retirement Benefit

<u>Tier I - Hazardous Duty [Sec. 5-173]:</u> 50% of Final Average Earnings plus 2% for each year in excess of 20.

Tier I Plan B [Sec. 5-162]: Same as Plan C up to age 65; thereafter 1% of Final Average Earnings up to \$4,800 plus 2% of Final Average Earnings in excess of \$4,800 times years, reduced for retirement prior to age 65 with less than 25 years. Minimum benefit with 25 years, \$300 per month.

Tier I Plan C [Sec. 5-162]: 2% of Final Average Earnings times years of service, reduced for retirement prior to age 65 with less than 25 years. Minimum with 25 years, \$300 per month.

Tier II Hazardous Duty Members [Sec. 5-192n]: 2½% of Final Average Earnings times up to 20 years of service plus 2% of Final Average Earnings times years of service in excess of 20 years, if any. Minimum with 25 years, \$300 per month (or less if retirement before 7-1-87).

Tier II All Other [Sec. 5-1921]: 1 1/3% of Final Average Earnings plus ½% of Final Average Earnings in excess of the year's breakpoint*, times up to 35 years of service from 10-1-82 plus 1 5/8% of Final Average Earnings times years of service in excess of 35 years, if any. Minimum with 25 years, \$300 per month (or less if retirement before 7-1-87).

*, \$10,700 increased by 6% each year after 1982, rounded to the nearest \$100, but not greater than Social Security Covered Compensation.

4. Early Retirement

Tier I - Hazardous Duty: None.

Tier I [Sec. 5-162]: Age 55 and 10 years of service; Normal Retirement Benefit reduced actuarially for retirement prior to age 60.

Tier II [Sec. 5-192m]: Age 55 and 10 years of service; Normal Retirement Benefit reduced 4% (effective 7/1/91) for each month prior to age 65; Minimum benefit with 25 years, \$300 per month (or less if retirement prior to 7-1-87).

5. Deferred Retirement

Tier I [Sec. 5-162]: May be deferred but not beyond age 70.

<u>Tier II [Sec. 5-1921]:</u> May be deferred but not beyond age 70. Benefit is based on salary and service to actual retirement.

6. Vesting

<u>Tier I [Sec. 5-166]:</u> Ten years of service; actuarially reduced benefit payable at age 55; in addition employees are always fully vested in their own contributions (after 1-1-83, Tier I, contributions with 5% interest from 1-1-82).

Tier I - Hazardous Duty [Sec. 5-173(f)]: As above.

<u>Tier II [Sec. 5-1920]</u>: Ten years of service or age 70 and 5 years; benefit payable at Normal Retirement Age or early retirement benefit payable at age 55; minimum benefit with 25 years, payable after age 55, \$300 per month (or less if retirement before 7-1-87).

7. Member Contributions

<u>Tier I - Hazardous Duty [Sec. 5-161]:</u> 4% of earnings up to Social Security Taxable Wage Base plus 5% above that level.

<u>Tier I - Plan B [Sec. 5-161]:</u> 2% of earnings up to Social Security Taxable Wage Base plus 5% above that level.

Tier I - Plan C [Sec. 5-161]: 5% of earnings.

Tier II - All Other [Sec. 5-192u]: None.

Tier II - Hazardous Duty [Sec. 5-192u]: 4% of earnings

8. Cost of Living

[Sec. 5-162b, 5-162d]: Annual adjustment each July 1 of up to 5% for retirements prior to 7-1-80; 3% for retirements after 7-1-80. For members (or beneficiaries) not covered by Social Security and age 62 and over, the maximum increase is 6%. If an actuarial surplus (as defined in the law) exists, the Commission may further increase retired benefits.

9. Death Benefits

<u>Tier I - State Police [Sec. 5-146]:</u> Survivor benefits to spouse of \$670 per month plus \$300 to a surviving dependent child (or \$700 to surviving dependent children).

<u>Tier I [Sec. 5-165a]:</u> If eligible for early or normal retirement, spouse benefit equal to 50% of average of Life Benefit and 50% J&S benefit member would have received. If not eligible to retire but 25 years, same benefit calculated as though age 55 using service and earnings at death.

[Sec. 5-168]: If not eligible for retirement, return of contributions (after 10-1-82, Tier I, with interest from 1-1-82 at 5%).

<u>Tier II [Sec. 5-192r]:</u> If eligible for early or normal retirement, spouse benefit equal to 50% of member's benefit under a 50% J&S. If not eligible to retire but 25 years, same benefit calculated as though age 55 using service and earnings at death.

[Sec. 5-192t]: If death is due to employment, a spouse with dependent children under 18 will be paid \$7,500 in not less than 60 installments while living and not remarried; also \$20 per month per child under 18. If no children under 18, spouse [or dependent parent(s), if no spouse] will be paid \$4,000 in not less than 60 installments.

10. <u>Disability Benefits</u>

Tier I [Sec. 5-142, 5-169, 5-173]: For non-service disabilities occurring prior to age 60 and after 5 years of service, benefit equals 3% times base salary times years of service (Maximum 1 2/3% times service to 65). If disability occurs prior to age 60 and is due to service, benefit equals 1 2/3% of salary times service projected to 65 (maximum 30 years) and is payable regardless of length of service. Exception: State Police benefit is accrued benefit if more than 20 years of service. State Police receive an additional benefit of \$360 per month plus \$300 to spouse plus \$300 to a surviving dependent child (or \$700 to surviving dependent children).

Maximum disability benefit is lesser of: 100% of salary less Workers Compensation and Social Security and less non-rehabilitation earnings, or 80% of salary less Workers Compensation and Social Security. Social Security is primary plus family.

Tier II [5-192p]: Prior to age 65 and due to service or after 10 years of service, benefit is 1 1/3% of final average earnings, plus ½% of excess earnings times service projected to 65 (maximum 30 years of service to Date of Disability if greater than 30 years). Same maximum as Tier I.

Minimum disability benefit including Workers Compensation and Social Security is 60% of salary.

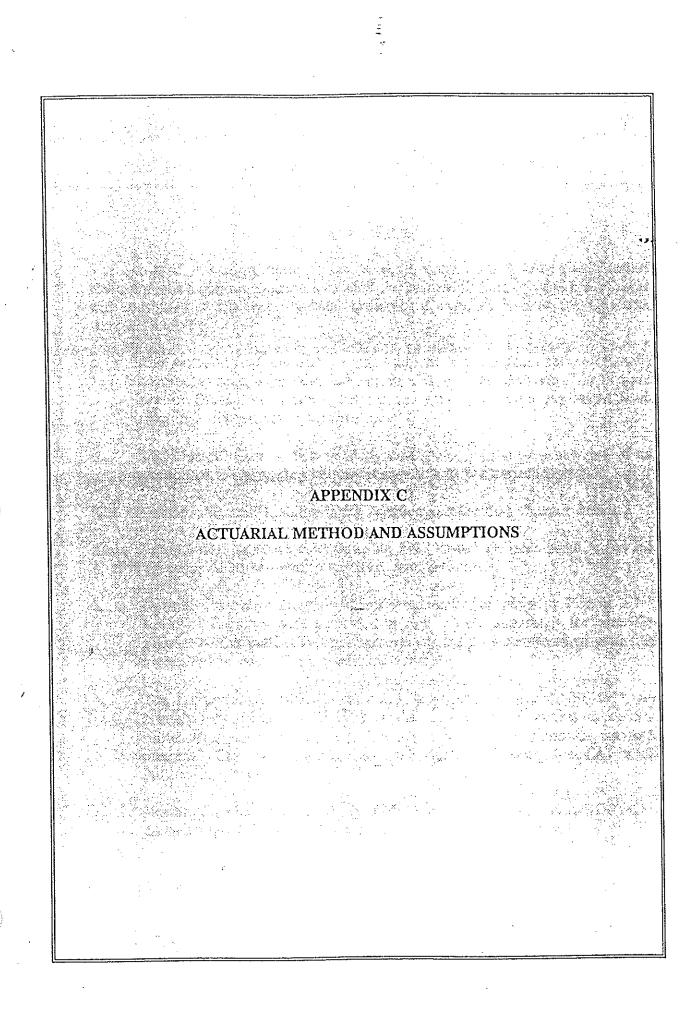
11. Optional Forms of Payment

<u>Tier I [Sec. 5-165]:</u> 50% Qualified Joint and Survivor (Normal Form if married at least 12 months).

<u>Tier II [Sec. 5-192q]:</u> 50% or 100% Joint and Survivor (Normal Form if married at least 12 months). Ten years certain and life. Twenty years certain and life. Life (Normal Form if not married at least 12 months).

12. Part-Time Employment

[Sec. 5-162g & Sec. 5-192k]: Service treated as if full-time for eligibility. If consistent part-time for all periods, treat as full-time. If varying schedule or some part-time, some full-time, service and salary proportionately adjusted.



APPENDIX C...

ACTUARIAL METHOD AND ASSUMPTIONS

A. Funding Method

- 1. The actuarial valuation method used is the Projected Unit Credit Cost Method. Recommended annual contributions until the accrued liability is completely funded will consist of two pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability.
 - a. The Accrued Liability is determined directly as the present value of benefits accrued to date, where the accrued benefits for each Member is the pro-rata portion (based on service to date) of the <u>projected</u> benefit payable at death, disability, retirement or termination.
 - b. The Normal Cost is then similarly determined as the present value of the portion of the projected benefit attributable to the current year.
- 2. The Unfunded Accrued Liability is the Accrued Liability less Current Assets.
- 3. Since the valuation was done as of June 30, 1991, costs have been projected to July 1, 1992 in order to correspond to the fiscal year as follows:
 - a. Normal Costs were determined as a percentage of earnings, by Tier, as of July 1, 1991. Earnings were projected to July 1, 1992, separately for each Tier because of the shifting Tier populations, and the projected earnings were then multiplied by each Tier's normal cost factor.
 - b. The Unfunded Accrued Liability was determined as of June 30, 1991, and brought forward to June 30, 1992 by adding the Normal Cost plus interest and subtracting expected employee, State, and Federal contributions, also with interest. This amount was amortized over the 30 years specified in the Arbitrator's Award.
 - c. Normal Cost and Past Service Amortization payments were adjusted to reflect payment in twelve equal installments at the end of each month.

B. Actuarial Assumptions

Mortality:

1983 Group Annuity Mortality Table with ages set back 4 years for females.

Service connected deaths are assumed to comprise 20% of total Death for Hazardous Duty employees and 0% for all other employees.

Investment Return:

8½%. According to Memorandum of Understanding between the State of Connecticut and the State Employees Bargaining Agent Coalition (SEBAC). See Page C-5 of this Appendix.

Salary Scale:

	Annual Rate
	of Increase
	10.2%
	9.2
	· 8.1
	7.1
	6.5
	6.0
	6.0
	6.0
·—	6.0

Disability:

	of Disability
<u>Age</u>	(Per 1000 lives)
20	0.75
25	0.85
30	0.97
35	1.21
40	1.70
45	2.79
50	5.09
55	9.25
60	14.42

Annual Rate

Service connected disabilities are assumed to comprise 50% of total Disability for Hazardous Duty employees and 20% for all other employees.

B. Actuarial Assumptions (cont'd)

Social Security Wage Base Increases:

6½% compounded annually.

Retirement Ages:

Hazardous Duty:

	First Year	There
<u>Age</u>	<u>Eligible</u>	<u>after</u>
47-50	50%	10%
51	48	10
52	46	10
53	44	10
54	42	10
55	40	10
56	38	10
57	36	10
58	34	10
59	30	10
60	50	30
61	50	30
62-70	100	100

All Others:

55-60	20%	5%
61	40	5
62	40	30
63	40	30
64	60	30
65	80	60
66	80	·· 60
67	80	60
68	80	60
69	80	60
70	100	100

B. Actuarial Assumptions (cont'd)

Turnover:

Five year select and ultimate rates as shown in the Turnover Table below for non-hazardous duty males; the same table with rates increased 10% for females; the same table with rates reduced 50% for hazardous duty.

<u>Turnover Table</u> Years of Participation

Age	0	1	2	3	4	5 & Over
20	50%	45%	30%	25%	20%	15%
25	45	35	30	25	20	10
30	40	30	25	20	15	8
35	35	28	20	15	10	6 .
40	30	20	10	8	6	4
45	20	10	8	6	4	2
50	10	8	6	4	2	0
55	10	7	5	2	0	0
60	10	0	0	0	0	0

Cost of Living Increases:

3% per year for retirees on or after 1-1-80.

4½% per year for retirees prior to 1-1-80.

Asset Valuation:

Adjusted market value: assets are written up (or down) by spreading recognition of gains and losses over five years, plus an additional write-up (or write-down) as necessary so that the final adjusted value is within 20% of market value.

C. Memorandum of Understanding

The Memorandum of Understanding sets forth the procedure to be used to determine the interest rate assumption for the June 30, 1990 through June 30, 1992 valuations:

	9 Year Average of Actual Rates of Return		Rate of Return for FY ending on Valuation Date		Interest Rate Assumption
If	at least 13.5%	and	at least 13.5%	then use	9.5%
If	between 13.0% and 13.5%	and	between 13.0% and 13.5%	then use	9.0%
If	less than 13.0%	and	less than 13.0%	then use	8.5%

For the June 30, 1991 valuation, this leads to the following result:

	Rate of Return for	
9 Year Average of Actual Rates of Return	FY ending on June 30, 1991	Interest Rate Assumption
13.5%	3.9%	8.5%

Supporting Data

Fiscal <u>Year End</u>	Rate of <u>Return</u> *
1983	31.3
1984	3.3
1985	·· 21.6
1986	21.6
1987	10.9
1988	3.2
1989	15.0
1990	10.3
1991	3.9
Average	13.5%

Provided by the Office of the Treasurer and used by us without audit.

APPENDIX D

ACTUARIAL SURPLUS TEST
AS OF JUNE 30, 1990

APPENDIX D

ACTUARIAL SURPLUS TEST AS OF JUNE 30, 1991

Section 5-162h(b) of the General Statutes of Connecticut provides that the Retirement Commission may grant additional cost of living adjustments for retired employees if an, actuarial surplus exists. An actuarial surplus is deemed to exist if three criteria are met:

I. <u>Investment Income</u>: actual rate of return for the Fiscal Year ending June 30, 1991 must exceed the actuarial assumption of 8.5%.

A.	Market Value of Assets July 1, 1990	\$3,212,798,521
В.	Market Value of Assets June 30, 1991	3,351,681,110
I.	Investment Income for FY 90-91	125,354,354

Actual Rate of Return for FY90-91 =
$$2I$$
 = 3.89% A+B-I

Actual Rate of Return of 3.89% is less than the assumption of 8.5%, so first criteria is <u>not met</u> and there is no actuarial surplus. We are showing criteria II and III for informational purposes.

II. <u>Assets Versus Liabilities</u>: Market value of assets must exceed 50% of specified liabilities.

A.	Market Value of Assets June 30, 1991	\$3,351,681,110
2		

B. Specified Liabilities June 30, 1991

Liability for Retired Members	\$2,780,344,628
Liability for Terminated Vested Members	15,545,866
Active Member Contributions	245,035,085
Interest on Active Member Contributions	<u>57,905,640</u>

Total \$3,098,831,219

C. 50% of Specified Liabilities \$1,549,415,610

Market Value of Assets exceeds 50% of Specified Liabilities, so second criteria is met.

APPENDIX E ENTRY AGE NORMAL VALUATION RESULTS

APPENDIX E ENTRY AGE NORMAL VALUATION RESULTS

	· · · · · · · · · · · · · · · · · · ·			
		JUNE 30, 1991	JUNE 30, 1990	
A. Curre	ent Résults			
1.	Present Value of Future Benefits - Active Members - Retired and Beneficiaries - Deferred Vested Members	\$5,750,739,368 2,780,344,628 	\$5,469,590,164 2,645,802,734 	
	- Total Present Value	8,546,629,862	8,126,960,606	
2.	Present Value Future Normal Cost Contributions	1,830,769,756	1,758,094,970	
3.	Total Actuarial Liability: (1)-(2)	6,715,860,106	6,368,865,636	
4.	Actuarial Value of Assets	3,207,958,056	2,972,748,082	
5.	Unfunded Actuarial Liability: (3)-(4)	3,507,902,050	3,396,117,554	
6.	Total Normal Cost	179,732,531	174,371,501	
7.	Expected Employee Contributions	32,243,520	31,729,498	
8.	Employer Normal Cost: (6)-(7)	147,489,011	142,642,003	
B. Proje	ctions to Following Year			
1.	Employer Normal Cost	\$ 168,125,314	\$ 162,657,469	
2.	Unfunded Actuarial Liability	3,471,293,420	3,536,356,917	
3.	Total Cost*	479,190,962	469,809,296	
4.	Total Cost as a Percent of Pay	22.46%	23.91%	
* The values above reflect the Arbitrator's Award, but do not reflect the Early Retirement Incentives				